L Number	Hits	Search Text	DB	Time stamp
1	73	(multiprocessor or (multiple adj processor)) and parallel\$4 and	USPAT;	2003/12/18 16:03
<b>!</b> '	'*	heaps!	US-PGPUB;	2000/12/10 10:00
		noupo.	EPO; JPO;	
			DERWENT;	,
			IBM_TDB	
2	24	((multiprocessor or (multiple adj processor)) and parallel\$4	USPAT;	2003/12/18 16:06
-	- 1	and heaps!) and (collect\$4 or gather\$4) near garbage	US-PGPUB;	
	i l	and heappy, and terminate or games to special games games games games and	EPO; JPO;	
	1		DERWENT;	
		'	IBM_TDB	
3	0	( ((multiprocessor or (multiple adj processor)) and parallel\$4	USPAT;	2003/12/18 16:04
		and heaps!) and (collect\$4 or gather\$4) near garbage) and	US-PGPUB;	
		(multiprocessor or (multiple adj processor) or processors!) with	EPO; JPO;	
		parallel\$4 with heap	DERWENT;	
			IBM_TDB	
4	6	( ((multiprocessor or (multiple adj processor)) and parallel\$4	USPAT;	2003/12/18 16:04
		and heaps!) and (collect\$4 or gather\$4) near garbage) and	US-PGPUB;	
		(multiprocessor or (multiple adj processor) or processor) with	EPO; JPO;	
	1	heap	DERWENT;	
_		( (/multiprocessor or /multiple adi processor)) and parellal®4	IBM_TDB	2003/12/18 16:06
5	0	( ((multiprocessor or (multiple adj processor)) and parallel\$4 and heaps!) and (collect\$4 or gather\$4) near garbage) and	USPAT; US-PGPUB;	2003/12/10 10:00
		(multiprocessor or (multiple adj processor) or processor) with	EPO; JPO;	
		parallel\$4 with heap	DERWENT;	
		parallely with heap	IBM_TDB	
6	3838	(collect\$4 or gather\$4) near garbage	USPAT;	2003/12/18 16:06
"		(solitoit : o. galioit i) noai galioago	US-PGPUB;	2000112710 10.00
			EPO; JPO;	
			DERWENT;	
			IBM_TDB	
7	0	((collect\$4 or gather\$4) near garbage) and (multiprocessor or	USPAT;	2003/12/18 16:07
		(multiple adj processor) or processor) with parallel\$4 with heap	US-PGPUB;	
	1		EPO; JPO;	
			DERWENT;	
			IBM_TDB	
8	29	((collect\$4 or gather\$4) near garbage) and (multiprocessor or	USPAT;	2003/12/18 16:09
1		(multiple adj processor) or processor) near6 heap	US-PGPUB;	
1			EPO; JPO;	
]			DERWENT;	
9	9	(((collect\$4 or gather\$4) near garbage) and (multiprocessor or	IBM_TDB   USPAT:	2003/12/18 16:07
٦		(((collection of gatheren) frear garbage) and (multiple east) or processor) near6 heap) and	US-PGPUB;	2003/12/10 10:07
		(multiprocessor or (multiple adj processor) or processor) near6	EPO; JPO;	
		parallel\$4	DERWENT;	
		,	IBM_TDB	
10	424	((collect\$4 or gather\$4) near garbage) and (multiprocessor or	USPAT;	2003/12/18 16:09
		(multiple adj processor))	US-PGPUB;	
	†	· · · · · · · · · · · · · · · · · · ·	EPO; JPO;	
	1		DERWENT;	
			IBM_TDB	
11	13	(((collect\$4 or gather\$4) near garbage) and (multiprocessor or	USPAT;	2003/12/18 16:10
		(multiple adj processor))) and processor near4 heap	US-PGPUB;	
			EPO; JPO;	
			DERWENT;	
	70470	707/\$ eals or 245/\$ eals	IBM_TDB	2002/42/42 44:42
-	79473	707/\$.ccls. or 345/\$.ccls.	USPAT;	2003/12/12 14:16
			US-PGPUB;	-
		·	EPO; JPO;   DERWENT;	
		·	IBM_TDB	
1.	21483	(707/\$.ccls. or 345/\$.ccls.) and (database or document or	USPAT;	2003/12/12 14:15
1	21703	(data stream)) same (analy\$6 or filter\$4 or classif\$6 or find\$4)	US-PGPUB;	2000/12/12 14.10
		(Late an adding adding to the diagonity of midden	EPO; JPO;	
			DERWENT;	
1			IBM_TDB	
<b></b>			<del>-</del>	•

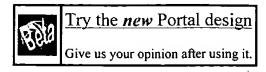
1607	345/764,853,854,855.cds.	USPAT;	2003/12/12 14:15
<b> </b>			
		,	
706		•	2003/12/12 14:15
	(data stream)) same (analy\$6 or filter\$4 or classif\$6 or find\$4)		
205	0.570.070.074.055	_	00004040404440
365		,	2003/12/12 14:16
	, · · · · · · · · · · · · · · · · · · ·	•	
	IInd\$4)		
ļ			
126	/345/764 953 954 955 cele, and /database or document or	_	2003/12/12 14:16
120	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		2003/12/12 14.10
	1 ' '		
	Interpolation (10774.ccis. of 11574.ccis.)		
			İ
126	(/345/764 853 854 855 ccls, and (database or document or	_	2003/12/12 14:17
	/ Walter to 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	1	
		1	
		1	
	The same of the sa	IBM TDB	
	706 365 126	345/764,853,854,855.ccls. and (database or document or (data stream)) same (analy\$6 or filter\$4 or classif\$6 or find\$4)  365 345/764,853,854,855.ccls. and (database or document or (data near stream)) same (analy\$6 or filter\$4 or classif\$6 or find\$4)	US-PGPUB; EPO; JPO; DERWENT; IBM_TDB US-PGPUB; IBM_TDB





> home : > about : > feedback : > login

US Patent & Trademark Office



## Search Results

Search Results for: [heap <near/6> processor<AND>((heaps<AND>(("garbage collection" <paragraph> (multi-processor or multiprocessor or "multiple processors")) )) )]
Found 16 of 124.998 searched.

Results 1	- 16 0	f 16 short	listing			
Sort by:	Title	Publication	Publication Date	Score	Binder	
> Search H	lelp/Tips			> Advanced Search		
Search	within	Results				
		•				
		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				

Hoard: a scalable memory allocator for multithreaded applications

Emery D. Berger, Kathryn S. McKinley, Robert D. Blumofe, Paul R. Wilson

Proceedings of the ninth international conference on Architectural support for programming languages and operating systems November 2000

Volume 28, 34 Issue 5, 5

Parallel, multithreaded C and C++ programs such as web servers, database managers, news servers, and scientific applications are becoming increasingly prevalent. For these applications, the memory allocator is often a bottleneck that severely limits program performance and scalability on multiprocessor systems. Previous allocators suffer from problems that include poor performance and scalability, and heap organizations that introduce false sharing. Worse, many allocators exhibit a dramatic incr ...

Hoard: a scalable memory allocator for multithreaded applications Emery D. Berger , Kathryn S. McKinley , Robert D. Blumofe , Paul R. Wilson ACM SIGPLAN Notices November 2000

Volume 35 Issue 11

Parallel, multithreaded C and C++ programs such as web servers, database managers, news servers, and scientific applications are becoming increasingly prevalent. For these applications, the memory allocator is often a bottleneck that severely limits program performance and scalability on multiprocessor systems. Previous allocators suffer from problems that include poor performance and scalability, and heap organizations that introduce false sharing. Worse, many allocators exhibit a dramatic incr ...

A space-efficient parallel garbage compaction algorithm
Wolfgang Küchlin

Proceedings of the 5th international conference on Supercomputing June 1991

100%

100%

h

c ge cf c

100%

100%

4 Creating and preserving locality of java applications at allocation and 🖪 garbage collection times

99%

Yefim Shuf, Manish Gupta, Hubertus Franke, Andrew Appel, Jaswinder Pal Singh ACM SIGPLAN Notices, Proceedings of the 17th ACM SIGPLAN conference on Object-oriented programming, systems, languages, and applications November 2002

Volume 37 Issue 11

The growing gap between processor and memory speeds is motivating the need for optimization strategies that improve data locality. A major challenge is to devise techniques suitable for pointer-intensive applications. This paper presents two techniques aimed at improving the memory behavior of pointer-intensive applications with dynamic memory allocation, such as those written in Java, First, we present an allocation time object placement technique based on the recently introduced notion of p ...

**5** Mostly lock-free malloc

99%

Dave Dice , Alex Garthwaite

ACM SIGPLAN Notices, Proceedings of the third international symposium on Memory management June 2002

Volume 38 Issue 2 supplement

Modern multithreaded applications, such as application servers and database engines, can severely stress the performance of user-level memory allocators like the ubiquitous malloc subsystem. Such allocators can prove to be a major scalability: impediment for the applications that use them, particularly for applications with large numbers of threads running on high-order multiprocessor systems. This paper introduces Multi-Processor Restartable Critical Sections, or MP-RCS. MP-RCS permits user-level ...

**6** A scalable mark-sweep garbage collector on large-scale shared-∢ memory machines

99%

Toshio Endo , Kenjiro Taura , Akinori Yonezawa

Proceedings of the 1997 ACM/IEEE conference on Supercomputing (CDROM) November 1997

This work describes implementation of a mark-sweep garbage collector (GC) for shared-memory machines and reports its performance. It is a simple "parallel" collector in which all processors cooperatively traverse objects in the global shared heap. The collector stops the application program during a collection and assumes a uniform access cost to all locations in the shared heap. Implementation is based on the Boehm-Demers-Weiser conservative GC (Boehm GC). Experiments have been done on Ultra ...

MULTILISP: a language for concurrent symbolic computation Robert H. Halstead

99%

ACM Transactions on Programming Languages and Systems (TOPLAS) October 1985

Volume 7 Issue 4

Multilisp is a version of the Lisp dialect Scheme extended with constructs for parallel execution. Like Scheme, Multilisp is oriented toward symbolic computation. Unlike some parallel programming languages, Multilisp incorporates constructs for causing side effects and for explicitly introducing parallelism. The potential complexity of dealing with side effects in a parallel context is mitigated by the nature of the parallelism constructs and by support for abstract data types: a recommende ...

h g e cf c

8 Concurrent compacting garbage collection of a persistent heap James O'Toole , Scott Nettles , David Gifford

99%

ACM SIGOPS Operating Systems Review, Proceedings of the fourteenth ACM symposium on Operating systems principles December 1993 Volume 27 Issue 5 We describe a replicating garbage collector for a persistent heap. The garbage

collector cooperates with a transaction manager to provide safe and efficient transactional storage management. Clients read and write the heap in primary memory and can commit or abort their write operations. When write operations are committed they are preserved in stable storage and survive system failures. Clients can freely access the heap during garbage collection because the collector concurrently builds a comp ...

Thread-specific heaps for multi-threaded programs

98%

Bjarne Steensgaard

ACM SIGPLAN Notices, Proceedings of the second international symposium on Memory management October 2000

Volume 36 Issue 1

Garbage collection for a multi-threaded program typically involves either stopping all threads while doing the collection or involves copious amounts of synchronization between threads. However, a lot of data is only ever visible to a single thread, and such data should ideally be collected without involving other threads.

Given an escape analysis, a memory management system may allocate threadspecific data in thread-specific heaps and allocate shared data in a shared heap. Garbage c ...

10 Heap architectures for concurrent languages using message passing

97%

Erik Johansson , Konstantinos Sagonas , Jesper Wilhelmsson

ACM SIGPLAN Notices, Proceedings of the third international symposium on Memory management June 2002

Volume 38 Issue 2 supplement

We discuss alternative heap architectures for languages that rely on automatic memory management and implement concurrency through asynchronous message passing. We describe how interprocess communication and garbage collection happens in each architecture, and extensively discuss the tradeoffs that are involved. In an implementation setting (the Erlang/OTP system) where the rest of the runtime system is unchanged, we present a detailed experimental comparison between these architectures using bo ...

11 Portable, unobtrusive garbage collection for multiprocessor systems

97%

Damien Doligez , Georges Gonthier

Proceedings of the 21st ACM SIGPLAN-SIGACT symposium on Principles of programming languages February 1994

We describe and prove the correctness of a new concurrent mark-and-sweep garbage collection algorithm. This algorithm derives from the classical on-the-fly algorithm from Dijkstra et al. [9]. A distinguishing feature of our algorithm is that it supports multiprocessor environments where the registers of running processes are not readily accessible, without imposing any overhead on the elementary operations of loading a register or reading or initializing a field. Furthermor ...

12 An abstract machine for parallel graph reduction

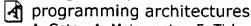
97%

Lal George

Proceedings of the fourth international conference on Functional programming languages and computer architecture November 1990

13 Design and performance of a coherent cache for parallel logic

97%



A. Goto, A. Matsumoto, E. Tick

ACM SIGARCH Computer Architecture News, Proceedings of the 16th annual international symposium on Computer architecture April 1989 Volume 17 Issue 3

This paper describes the design and performance of a tightly-coupled sharedmemory coherent cache optimized for the execution of parallel logic programming architectures. The cache utilizes a copy-back write-allocation protocol having five states and a hardware lock mechanism. Optimizations for logic programming are introduced in four software-controlled memory access commands: direct-write, exclusive-read, read-purge, and read-invalidate. In this paper we describe these operations and pres ...

**14** A parallel, real-time garbage collector

95%

Perry Cheng , Guy E. Blelloch

ACM SIGPLAN Notices, Proceedings of the ACM SIGPLAN 2001 conference on Programming language design and implementation May 2001 Volume 36 Issue 5

We describe a parallel, real-time garbage collector and present experimental results that demonstrate good scalability and good real-time bounds. The collector is designed for shared-memory multiprocessors and is based on an earlier collector algorithm [2], which provided fixed bounds on the time any thread must pause for collection. However, since our earlier algorithm was designed for simple analysis, it had some impractical features. This paper presents the extensions necessary for a pract ...

15 An architecture for efficient Lisp list access

88%



A. R. Pleszkun , M. J. Thazhuthaveetil

ACM SIGARCH Computer Architecture News, Proceedings of the 13th annual international symposium on Computer architecture June 1986 Volume 14 Issue 2

In this paper, we present a Lisp machine architecture that supports efficient list manipulation. This Lisp architecture is organized as two processing units: a List Processor (LP), that performs all list related operations and manages the list memory, and an Evaluation Processor (EP), that maintains the addressing and control environment. The LP contains a translation table (LPT) that maps a small set of list identifiers into the physical memory addresses of objects. Essentially, the LP

**16** Implementation of multilisp: Lisp on a multiprocessor

87%



Robert H. Halstead Proceedings of the 1984 ACM Symposium on LISP and functional programming August 1984

Multilisp is an extension of Lisp (more specifically, of the Lisp dialect Scheme [15]) with additional operators and additional semantics to deal with parallel execution. It is being implemented on the 32-processor Concert multiprocessor. The current

implementation is complete enough to run the Multilisp compiler itself, and has been run on Concert prototypes including up to four processors. Novel techniques are used for task scheduling and garbage collection. The task sche ...

## Results 1 - 16 of 16 short listing

The ACM Portal is published by the Association for Computing Machinery. Copyright © 2003 ACM, Inc.

IEEE HOME I SEARCH IEEE I SHOP I WEB ACCOUNT I CONTACT IEEE



10/1/20

Publications/Services Standards Conferences Welcome **United States Patent and Trademark Office** Quick Links FAQ Terms IEEE Peer Review Welcome to IEEE Xplore® SEARCH RESULTS [PDF Full-Text (340 KB)] **PREVIOUS** NEXT DOWNLOAD CITATIC C Home — What Can I Access? On multi-threaded list-processing and garbage C Log-out collection Tables of Contents Kuechlin, W.W. Nevin, N.J. — Journals Dept. of Comput. & Inf. Sci., Ohio State Univ., Columbus, OH; & Magazines This paper appears in: Parallel and Distributed Processing, 1991. )- Conference Proceedings of the Third IEEE Symposium on **Proceedings** Meeting Date: 12/02/1991 -12/05/1991 Standards Publication Date: 2-5 Dec 1991 Location: Dallas, TX, USA Search On page(s): 894-897 References Cited: 17 C By Author IEEE Catalog Number: 91TH0396-2 O- Basic INSPEC Accession Number: 4368138 Advanced Abstract: Member Services The authors discuss the problem of parallel list-processing and garbage collec in an environment based on lightweight processes (threads). Their main insig Or Join IEEE that the threads paradigm suggests a heap memory layout and garbage colle - Establish IEEE technique which is quite different from existing Lisp and Prolog systems. They Web Account introduce a hierarchy of fork constructs and a memory structure which suppo C - Access the garbage collection schemes which are local to threads. For example, the new **IEEE Member** technique of preventive garbage collection can recover all intermediate list me Digital Library used by a function at the small expense of copying its output parameters Print Format Index Terms: list processing storage management fork constructs garbage collection heap memo layout intermediate list memory memory structure multithreaded list processing para list-processing **Documents that cite this document** Select link to view other documents in the database that cite this one.

SEARCH RESULTS [PDF Full-Text (340 KB)] PREVIOUS NEXT DOWNLOAD CITATION

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Join IEEE | Web Account | New this week | OPAC Linking Information | Your Feedback | Technical Support | Ema No Robots Please | Release Notes | IEEE Online Publications | Help | FAQ | Terms | Back to Top

Copyright © 2003 IEEE - All rights reserved

e

C



EEE HOME   SEARCH	TEEE I SHOP I WEB ACCOUNT I CONTACT IEEE
Membership Publica	itions/Services Standards Conferences Careers/Jobs
IEEE )	Welcome United States Patent and Trademark Office
Help FAQ Terms IEE	E Peer Review Quick Links S
Welcome to IEEE Xplore*	SEARCH RESULTS [PDF Full-Text (960 KB)] PREVIOUS NEXT DOWNLOAD CITATIC
O- Home O- What Can I Access? O- Log-out	Evaluation of parallel copying garbage collection or shared-memory multiprocessor
Tables of Contents  - Journals & Magazines - Conference Proceedings	Imai, A. Tick, E. Inst. for New Generation Comput. Technol., Tokyo; This paper appears in: Parallel and Distributed Systems, IEEE Transaction
O- Standards Search	Publication Date: Sep 1993 On page(s): 1030-1040
O- By Author O- Basic O- Advanced	Volume: 4, Issue: 9 ISSN: 1045-9219 References Cited: 22 CODEN: ITDSEO INSPEC Accession Number: 4582750
Member Services  Join IEEE  Establish IEEE Web Account  Access the IEEE Member Digital Library  Print Format	Abstract:  A parallel copying garbage collection algorithm for symbolic languages execut on shared-memory multiprocessors is proposed. The algorithm is an extensio Baker's sequential algorithm with a novel method of heap allocation to prever fragmentation and facilitate load distribution during garbage collection. An implementation of the algorithm within a concurrent logic programming syste VPIM, has been evaluated and the results, for a wide selection of benchmarks analyzed here. The authors show 1) how much the algorithm reduces the contention for critical sections during garbage collection, 2) how well the load balancing strategy works and its expected overheads, and 3) the expected sp achieved by the algorithm
·	Index Terms:  logic programming parallel algorithms resource allocation shared memory systems storage management VPIM concurrent logic programming system contention fragmentation garbage collection heap allocation load distribution load-balancing copying shared-memory multiprocessor symbolic languages
	Documents that cite this document

SEARCH RESULTS [PDF Full-Text (960 KB)] PREVIOUS **NEXT** DOWNLOAD CITATION

Select link to view other documents in the database that cite this one.

<u>Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Join IEEE | Web Account | New this week | OPAC Linking Information | Your Feedback | Technical Support | Ema</u>

h

No Robots Please | Release Notes | IEEE Online Publications | Help | FAQ| Terms | Back to Top

Copyright © 2003 IEEE — All rights reserved

IEEE HOME ! SEARCH IEEE | SHOP | WEB ACCOUNT | CONTACT IEEE



Membership Public	ations/Services Standards Conferences Careers/Jobs
IEEE	Welcome United States Patent and Trademark Office
Help FAQ Terms IE	-
Welcome to IEEE Xplore  - Home - What Can I Access? - Log-out  Tables of Contents  - Journals & Magazines - Conference Proceedings - Standards  Search - By Author - Basic - Advanced	Your search matched 2 of 989552 documents.  A maximum of 2 results are displayed, 15 to a page, sorted by Relevance in descending order. You may refine your search by editing the current search expression or entering a new one the text box. Then click Search Again.  [( parallel) and heap and (proces multiprocessor or "multiple processor")"> Search Again  Results: Journal or Magazine = JNL Conference = CNF Standard = STD  1 A shared-memory multiprocessor garbage collector and its evaluatio committed-choice logic programs  Imai, A.; Tick, E.; Parallel and Distributed Processing, 1991. Proceedings of the Third IEEE Sympo on , 2-5 Dec. 1991  Page(s): 870 -877
Member Services  - Join IEEE - Establish IEEE Web Account - Access the IEEE Member Digital Library - Print Format	[Abstract] [PDF Full-Text (716 KB)] IEEE CNF  2 Evaluation of parallel copying garbage collection on a shared-memor multiprocessor  Imai, A.; Tick, E.;  Parallel and Distributed Systems, IEEE Transactions on , Volume: 4 Issue: 9 , 1993  Page(s): 1030 -1040
•	[Abstract] [PDF Full-Text (960 KB)] IEEE JNL

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced Search Join IEEE | Web Account | New this week | OPAC Linking Information | Your Feedback | Technical Support | Email Alerting No Robots Please | Release Notes | IEEE Online Publications | Help | FAQ| Terms | Back to Top

Copyright © 2003 IEEE - All rights reserved

c

IEEF, HOME I SEARCH IEEE I SHOP I WEB ACCOUNT I CONTACT IEEE



Standards Conferences Careers/Jobs Membership Publications/Services Welcome **United States Patent and Trademark Office** » / FAQ Terms IEEE Peer Review **Quick Links**  $\Diamond$ [PDF Full-Text (716 KB)] Welcome to IEEE Xplores SEARCH RESULTS NEXT DOWNLOAD CITATION C Home — What Can I Access? A shared-memory multiprocessor garbage collector C Log-out and its evaluation for committed-choice logic progr **Tables of Contents** Imai, A. Tick, E. **Journals** Icot, Tokyo; & Magazines This paper appears in: Parallel and Distributed Processing, 1991. - Conference Proceedings of the Third IEEE Symposium on **Proceedings** Meeting Date: 12/02/1991 -12/05/1991 ( )- Standards Publication Date: 2-5 Dec 1991 Location: Dallas, TX, USA Search On page(s): 870-877 References Cited: 14 By Author IEEE Catalog Number: 91TH0396-2 C)- Basic INSPEC Accession Number: 4368135 — Advanced Abstract: Member Services A parallel copying garbage collection algorithm for symbolic languages execut on shared-memory multiprocessors is proposed. The algorithm is an extensio Soin IEEE Baker's sequential algorithm with a novel method of heap allocation to prever - Establish IEEE fragmentation and facilitate load distribution during garbage collection. An Web Account implementation of the algorithm within a concurrent logic programming syste O- Access the VPIM, has been evaluated and the results, for a wide selection of benchmarks IEEE Member analyzed. The authors show (1) how much the algorithm reduces the content Digital Library critical sections during garbage collection, (2) how well the load-balancing str works and its expected overheads, and (3) the expected speedup achieved by Print Format algorithm **Index Terms:** logic programming parallel algorithms shared memory systems storage management VPIM benchmarks committed-choice logic programs heap allocation load-balancing parallel copying garbage collection algorithm sequential algorithm shared-memory multiprocessor garbage collector symbolic languages Documents that cite this document Select link to view other documents in the database that cite this one.

SEARCH RESULTS [PDF Full-Text (716 KB)]

Home | Log-out | Journals | Conference Proceedings | Standards | Search by Author | Basic Search | Advanced

Join IEEE | Web Account | New this week | OPAC Linking Information | Your Feedback | Technical Support | Ema

No Robots Please | Release Notes | IEEE Online Publications | Help | FAQ | Terms | Back to Top

**NEXT** 

DOWNLOAD CITATION

е

g